

What is claimed is

1. A self-healing cable comprising a conductor and a water-swellaable composition surrounding said conductor, said water-swellaable composition comprising:
 - a) a substantially non-water-swellaable polymer; and
 - b) a water-swellaable filler admixed to the polymer, wherein said water-swellaable filler is selected from the group consisting of bentonite, lignite, alumina trihydrate, barytes, calcium carbonate, chlorite, clays, pyrophyllite, talc, polyacrylic acid, cellulose esters, ethylene vinyl chloride, acrylic resins, alkyd resins, polyethylene oxide, collagens, gelatins, and ethylene acrylic acid.
2. The self-healing cable of claim 1, wherein the water-swellaable filler is capable of causing a swelling of the water-swellaable composition of from about 5 percent to about 200 percent by weight.
3. The self-healing cable of claim 2, wherein the water-swellaable filler is capable of causing swelling of the water-swellaable composition from about 15 percent to about 150 percent by weight.
4. The self-healing cable of claim 1, wherein the Brookfield viscosity of the water-swellaable composition at 300°F is from about 3,000,000 cps to about 13,000,000 cps.

5. The self-healing cable of claim 1, wherein the water-swellaable filler is sodium bentonite.
6. The self-healing cable of claim 5, wherein the water-swellaable composition is from about 10 percent to about 70 percent by weight of sodium bentonite.
7. The self-healing cable of claim 6, wherein the water-swellaable composition is from about 20 percent to about 50 percent by weight of sodium bentonite.
8. The self-healing cable of claim 1, wherein the water-swellaable filler is sodium polyacrylate.
9. The self-healing cable of claim 8, wherein the water-swellaable composition is from about 2 percent to about 20 percent by weight of sodium polyacrylate.
10. The self-healing cable of claim 1, wherein the water-swellaable composition is from about 2 percent to about 70 percent by weight.

11. The self-healing cable of claim 1, wherein the conductor comprises a plurality of wires.
12. The self-healing cable of claim 8, wherein the water-swellaable composition directly surrounds the conductor.
13. The self-healing cable of claim 12, wherein the water-swellaable composition further fills the interstices between the wires.
14. The self-healing cable of claim 1, wherein the water-swellaable composition is disposed between two polymeric sheets.
15. The self-healing cable of claim 1, wherein the water-swellaable composition is surrounded by an insulator.
16. The self-healing cable of claim 1, wherein an insulator is disposed between the water-swellaable composition and the conductor.
17. The self-healing cable of claim 1, wherein the water-swellaable composition directly surrounds the conductor.

18. The self-healing cable of claim 17, further comprising a polymeric sheet surrounding the water-swellaable composition.
19. The self-healing cable of claim 1, wherein a layer of polymeric sheet separates the conductor from the water-swellaable composition.
20. A self-healing cable comprising a conductor and a water-swellaable polymer surrounding said conductor.
21. The self-healing cable of claim 20, wherein the water-swellaable polymer is selected from the group consisting of polyethylene vinyl chloride, polyacrylic resins, polyalkyd resins, polyethylene oxide, and polyethylene acrylate.
22. The self-healing cable of claim 20, wherein said water-swellaable polymer has a molecular weight from about 100,000 to about 8,000,000.
23. The self-healing cable of claim 22, wherein said water-swellaable polymer has a molecular weight from about 100,000 to about 1,000,000.
24. The self-healing cable of claim 20, wherein said water-swellaable polymer has a melt index of about 1 to about 500.

25. The self-healing cable of claim 24, wherein said water-swellaable polymer has a melt index of about 200 to about 400.
26. The self-healing cable of claim 20, wherein the conductor comprises a plurality of wires.
27. The self- healing cable of claim 26, wherein the water-swellaable polymer directly surrounds the conductor.
28. The self- healing cable of claim 27, wherein the water-swellaable polymer further fills the interstices between the wires.
29. The self- healing cable of claim 20, wherein the water-swellaable polymer is disposed between two polymeric sheets.
30. The self- healing cable of claim 20, wherein the water-swellaable polymer is surrounded by an insulator.
31. The self- healing cable of claim 20, wherein an insulator is disposed between the water-swellaable polymer and the conductor.

32. The self-healing cable of claim 20, wherein the water-swellaable polymer directly surrounds the conductor.
33. The self-healing cable of claim 32, further comprising a polymeric sheet surrounding the water-swellaable polymer.
34. The self-healing cable of claim 20, wherein a layer of polymeric sheet separates the conductor from the water-swellaable polymer.
35. A method of making a self-healing cable comprising providing a conductor and surrounding the conductor with a water-swellaable composition, said water-swellaable composition comprising:
- a) a substantially non-water-swellaable polymer; and
 - b) a water-swellaable filler admixed to the polymer, said water-swellaable filler are selected from the group consisting of bentonite, lignite, alumina trihydrate, barytes, calcium carbonate, chlorite, clays, pyrophyllite, talc, polyacrylic acid, cellulose esters, ethylene vinyl chloride, acrylic resins, alkyd resins, polyethylene oxide, collagens, gelatins, and ethylene acrylic acid.
36. The method of claim 35, wherein the water-swellaable filler is capable of causing a swelling of the water-swellaable composition of from about 5 percent to about 200 percent by weight.

37. The method of claim 36, wherein the water-swellaable filler is capable of causing swelling of the water-swellaable composition from about 15 percent to about 150 percent by weight.

38. The method of claim 35, wherein the Brookfield viscosity of the water-swellaable composition at 300°F is from about 3,000,000 cps to about 13,000,000 cps.

39. The method of claim 35, wherein the water-swellaable filler is sodium bentonite.

40. The method of claim 39, wherein the water-swellaable composition is from about 10 percent to about 70 percent by weight sodium bentonite.

41. The method of claim 40, wherein the water-swellaable composition is from about 20 percent to about 50 percent by weight of sodium bentonite.

42. The method of claim 35, wherein the water-swellaable filler is sodium polyacrylate.

43. The method of claim 42, wherein the water-swellaable composition is from about 2 percent to about 20 percent by weight of sodium polyacrylate.
44. The method of claim 35, wherein the water-swellaable composition is from about 2 percent to about 70 percent by weight.
45. The method of claim 35, wherein the conductor comprises a plurality of wires.
46. The method of claim 45, wherein the water-swellaable composition directly surrounds the conductor.
47. The method of claim 46, wherein the water-swellaable composition further fills the interstices between the wires.
48. The method of claim 35, wherein the water-swellaable composition is disposed between two polymeric sheets.
49. The method of claim 35, wherein the water-swellaable composition is surrounded by an insulator.

50. The method of claim 35, wherein an insulator is disposed between the water-swellaable composition and the conductor.
51. The method of claim 35, wherein the water-swellaable composition directly surrounds the conductor.
52. The method of claim 55, further comprising a polymeric sheet surrounding the water-swellaable composition.
53. The method of claim 35, wherein a layer of polymeric sheet separates the conductor from the water-swellaable composition.
54. A method of making a self-healing cable comprising providing a conductor and covering the conductor with water-swellaable polymer.
55. The method of claim 54, wherein the water-swellaable polymer is selected from the group consisting of polyethylene vinyl chloride, polyacrylic resins, polyalkyd resins, polyethylene oxide, and polyethylene acrylate.
56. The method of claim 54, wherein said water-swellaable polymer has a molecular weight from about 100,000 to about 8,000,000.

57. The method of claim 56, wherein said water-swellaable polymer has a molecular weight from about 100,000 to about 1,000,000.
58. The method of claim 54, wherein said water-swellaable polymer has a melt index of about 1 to about 500.
59. The method of claim 55, wherein said water-swellaable polymer has a melt index of about 200 to about 400.
60. The method of claim 54, wherein the conductor comprises a plurality of wires.
61. The method of claim 60, wherein the water-swellaable composition directly surrounds the conductor.
62. The method of claim 61, wherein the water-swellaable composition further fills the interstices between the wires.
63. The method of claim 54, wherein the water-swellaable composition is disposed between two polymeric sheets.

64. The method of claim 54, wherein the water-swellaable composition is surrounded by an insulator.
65. The method of claim 54, wherein an insulator is disposed between the water-swellaable composition and the conductor.
66. The method of claim 54, wherein the water-swellaable composition is directly surrounds the conductor.
67. The method of claim 66, further comprising a polymeric sheet surrounding the water-swellaable composition.
68. The method of claim 54, wherein a layer of polymeric sheet separates the conductor from the water-swellaable composition.